

## Features

- Application: high-frequency, sharp-impulse circuits.
- To protect active components in missile detonators, triac switching circuits, etc.
- Offer every better aspect of performance than carbon composition resistor.
- No "sintering effect" caused by high surge that greatly decreases resistance value.
- Replaces carbon composition resistor.
- Conformal multi-layer non-flammable coating.
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

## DIMENSIONS

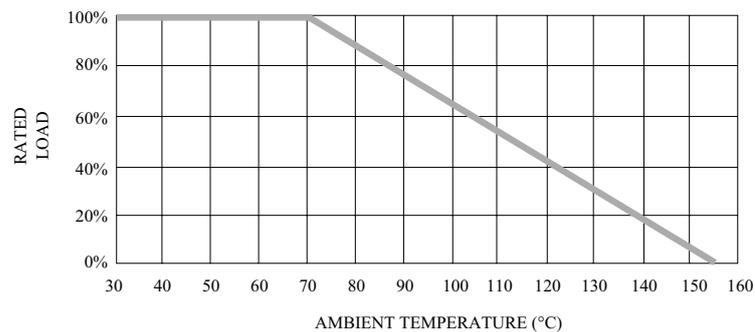
Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000 Pcs
PPR25	6.50 ± 1.0	2.6 ± 0.3	26 ± 3.0	0.55 ± 0.02	300 Grams
PPR52	6.50 ± 1.0	2.6 ± 0.3	26 ± 3.0	0.55 ± 0.02	300 Grams
PPR51	9.00 ± 1.0	3.2 ± 0.2	26 ± 3.0	0.70 ± 0.03	340 Grams
PPR100	11.0 ± 1.0	4.0 ± 0.5	28 ± 3.0	0.70 ± 0.03	500 Grams
PPR200	13.5 ± 1.0	5.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	1050 Grams

## GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Permissible Surge Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
PPR25	1/4W	250V	7KV	10Ω	4.7MΩ	±5%	E-24
PPR52	1/2W	250V	7KV	10Ω	4.7MΩ	±5%	E-24
PPR51	1/2W	350V	10KV	2.2Ω	4.7MΩ	±5%	E-24
PPR100	1W	350V	15KV	10Ω	4.7MΩ	±5%	E-24
PPR200	2W	400V	20KV	10Ω	4.7MΩ	±5%	E-24

Special sizes, values, and specifications not listed available on special order.

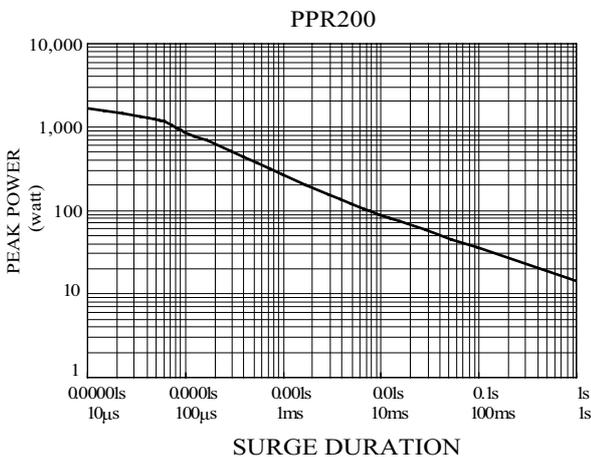
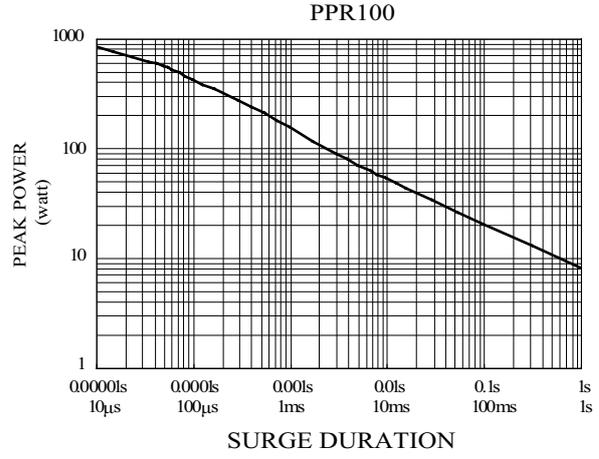
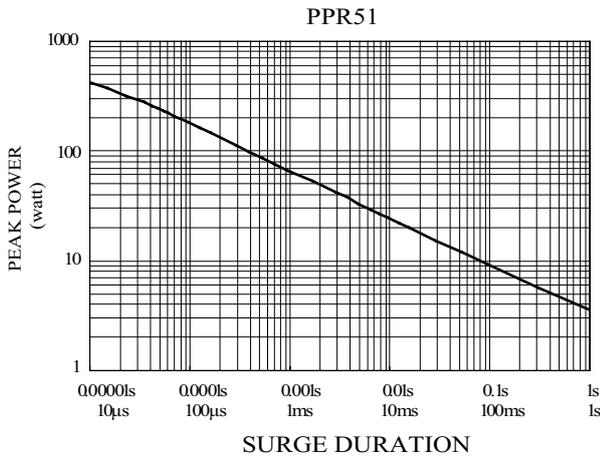
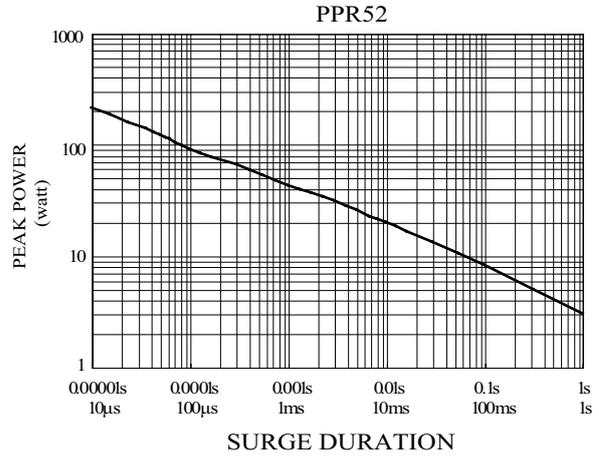
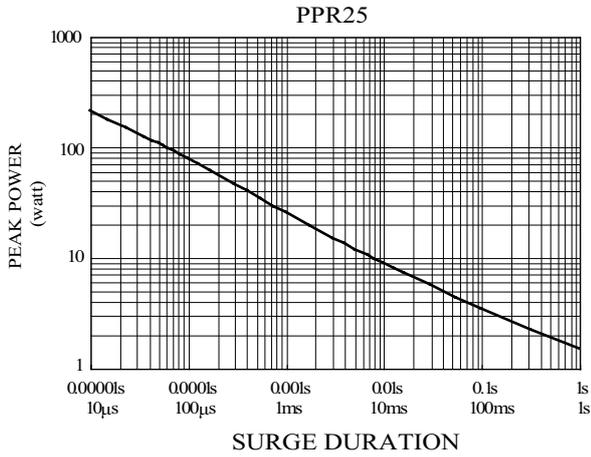
## POWER DERATING CURVE



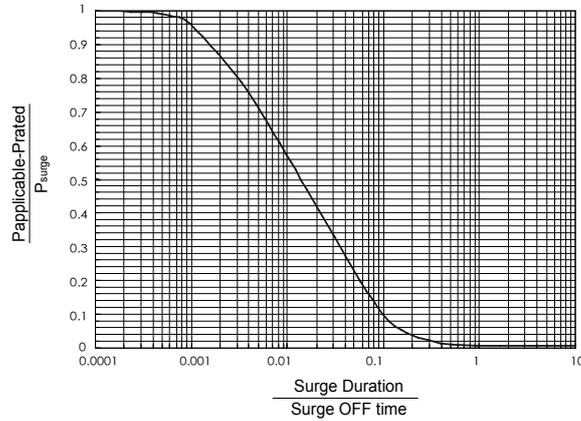
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■ SINGLE SURGE PERFORMANCE



## ■ SURGE POWER DERATING CURVE



### Notes:

- SINGLE SURGE PERFORMANCE graph is good for NON REPETITIVE applications operating in an ambient temperature of 70°C or less. For temperatures above 70°C, the graph power must be derated further linearly down to zero at 155°C.
- To determine applicable surge power in continuous-surge applications:
  1. Identify allowable duration and peak power  $P_{\text{surge}}$  of single surge;
  2. Determine ratio of surge duration/surge OFF time in application;
  3. Calculate  $P_{\text{applicable}}$  backwardly according to Y-axis of SURGE POWER DERATING CURVE.

## ■ TECHNICAL SUMMARY

Characteristics	Limits	
Dielectric Withstanding Voltage, VAC or DC	PPR25/ 52/ 51/ 100 :	600
	PPR200:	700
Temperature Coefficient, PPM / °C*	±750, ±1200	
Operating Temperature Range, °C	-55 ~ +155	
Insulation Resistance, MΩ	>10 <sup>4</sup>	

\* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

## ■ PART NUMBER

Example: PPR200J10K0TKZTB500

PPR200	J	10K0	TKZ	TB500
Type	Tolerance	Resistance	TCR	Packaging
	J (5%)	10KΩ <b>4-character code</b> containing - 3 significant digits 1 letter multiplier  <u>OHM MULTIPLIER</u> R = 1 K = 10 <sup>3</sup> M = 10 <sup>6</sup> G = 10 <sup>9</sup>	<b>3-character code</b>  TKZ = Default Product Temperature Coefficient.  Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.*	<b>5-character code</b>  TB = Tape Box (pieces per box) <u>PPR25/PPR52/</u> <u>PPR51</u> 2K0 = 2,000  <u>PPR100</u> 1K0 = 1,000  <u>PPR200</u> 500 = 500

\* For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

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## ■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits		
Short Time Over Load	<b>IEC 60115-1 4.13</b> 5 seconds 2.5x rated voltage (not over 2X max. working voltage)	±1%		
Load Life In Humidity	<b>IEC 60115-1 4.24</b> 56 days rated load (not over max. working voltage) at (40±2)°C and (93±3)% relative humidity	±5%		
Load Life	<b>IEC 60115-1 4.25.1</b> Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±5%		
Resistance To Soldering Heat	<b>IEC 60115-1 4.18.2</b> Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%		
Solderability	<b>IEC 60115-1 4.17.2</b> Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% min.coverage		
Vibration	<b>IEC 60115-1 4.22</b> Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±0.5%		
Thermal Endurance	<b>IEC 60115-1 4.25.3</b> 1000 hours at 155°C without load	±1%		
Thermal Shock	<b>IEC 60115-1 4.19</b> -55°C 30minutes, +155°C 30minutes, 5 cycles	±2%		
Surge Test	<b>Proprietary test specification FRC-TR-010113 = <math>\sqrt{(2400 \times P \times R)}</math> DC</b> P is power rating, R is resistance value, surge voltage is not more than listed at right. Surge spec = 1.2/50µs Period = 12 sec Number of surges = 50	PPR25	7KV	±5%
		PPR52	7KV	
		PPR51	10KV	
		PPR100	15KV	
		PPR200	20KV	